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Comparison of H and 3He Minority Heated Discharges in Alcator C-Mod ICRF Experiments<sup>1</sup> S.J. WUKITCH, Y. LIN, A. PARISOT, P.T. BONOLI, M. PORKOLAB, ALCATOR C-MOD TEAM<sup>2</sup> — In Alcator C-Mod, minority ion cyclotron heating is the primary auxiliary heating scenario and we have depended upon H minority and 3He minority scenarios for given frequency and magnetic fields, ie H minority at 80 MHz and 5.4 T. Previous 3He minority heating experiments on C-Mod have shown a lower heating efficiency compared with H minority heated discharges and stronger than expected dependence on 3He minority concentration. A qualitative explanation for these results may be the lower single pass absorption for 3He than H minority. The weak absorption allows parasitic absorption mechanisms to compete more effectively than in the case of strong absorption. Previous experiments were limited in scope by the combination of available frequencies and magnetic fields. Recent experiments focused upon a direct comparison of H and 3He heated discharges at  $\sim 5$  T. Initial results indicate that the heating effectiveness can be optimized and confirm a strong sensitivity to 3He concentration. Results from additional experiments comparing the heating effectiveness and impurity production with H minority heated discharges will be presented.

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